Atty. Dkt. No.: 9863.0-02 (1856-38400) *Patent*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Joe D. Allison, et al.	§	
		§	Group Art Unit: 1754
Serial No.:	10/644,249	§	
		§	Examiner: N/A
Filing Date:	August 20, 2003	§	
		§	Confirmation No. 6049
Title:	METAL LOADED CARBON FILAMENTS	§	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence and PTO Form 1449 with citations attached, is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on

3-29-2004
(Date of Deposit)
Edith Shek

Sir:

This Information Disclosure Statement, including completed Form PTO-1449, comprises a list of pertinent art of which Applicants are aware. A copy of each publication listed on Form PTO-1449 is enclosed herewith.

As a part of this submission, an electronic Information Disclosure Statement (eIDS) is being transmitted on this date, and includes a listing of the U.S. Patents and Published Applications. A printed copy of that submission is attached hereto. In accordance with 37 C.F.R. 1.98(e), no paper copies of those U.S. Patent and Published Applications are enclosed.

The submission of this Information Disclosure Statement and the references submitted therewith is not an admission that the art cited is "prior" with respect to the present invention, nor is it a representation, that no better art exists. Applicants hereby reserve the right to swear behind or otherwise disprove any alleged "prior" nature of any art cited should the facts support and the situation warrant such an action.

It is submitted that the art cited does not constitute a bar to the patentability of Applicants' invention under 35 U.S.C. § 102 or § 103.

Respectfully submitted,

Date: 3-29-04

Rodney B. Carroll
Reg. No. 39,624

ATTORNEY FOR APPLICANTS

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	4

Complete if Known	
Application Number	10/644,249
Filing Date	August 20, 2003
First Named Inventor	Joe D. Allison
Art Unit	1754
Examiner Name	Not Assigned
Attorney Docket Number	9863.0-02 (1856-38400)

U.S. PATENT DOCUMENTS

Examiner's Initials	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US H1,311	05-03-1994	Nakamura, et al	
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document County Code[3]-Number[4]-Kind Code[5](if known)	Publication Date MM-DD-YY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	BA	GB1469930	04-1977	Baker, et al		
	BB	RU729211	04-1980	All-Union Sci. Res. Inst.		
	BC	RU925969	05-1982	All-Union Sci. Res. Inst.		
	BD	JP117622	07-1982	Showa Denko KK		
	BE	EP0198558	10-1986	Dow Chemical Co.		
	BF	WO 00/43336	7-27-2000	Univ. of Delaware		

Examiner Signature		Date Considered	

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Sheet	2	of	4

Complete if Known	
Application Number	10/644,249
Filing Date	August 20, 2003
First Named Inventor	Joe D. Allison
Art Unit	1754
Examiner Name	
Attorney Docket Number	9863.0-02 (1856-38400)

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue numbers(s), publisher, city and/or country where published.	T[2]
	AA	AUDIER, M., et al, "Crystallographic Orientations of Catalytic Particles in Filamentous Carbon; Case of Simple Conical Particles," *Journal of Crystal Growth,* 1981, pp. 549-556.	
	AB	AUDIER, M., et al, "Transmission Electron Microscopic Study of Single Crystals of Fe_7C_3," *Journal of Crystal Growth,* 1983, pp. 125-134.	
	AC	AUDIER, M., et al, "Formation and Characterization of Catalytic Carbons Obtained From CO Disproportionation Over an Iron Nickel Catalyst – II," *Carbon,* 1981, pp. 99-105.	
	AD	AUDIER, M., et al, "Morphology and Crystalline Order in Catalytic Carbons," *Carbon,* 1981, pp. 217-224.	
	AE	AUDIER, M., et al, "Relative Crystallographic Orientation of Carbon and Metal in a Filamentous Catalytic Carbon," *Carbon,* 1979, pp. 73-76.	
	AF	BAIRD, T., et al, "Carbon Formation on Iron and Nickel Foils by Hydrocarbon Pyrolysis – Reactions at 700° C," *Carbon,* 1974, pp. 591-602.	
	AG	BAIRD, T., et al, "Structure of Fibrous Carbon," *Nature,* 1971, pp. 329-330.	
	AH	BAKER, R.T.K., et al, "The Formation of Filamentous Carbon From Decomposition of Acetylene Over Vanadium and Molybdenum," *Carbon,* 1983, pp. 463-468.	
	AI	BAKER, R.T.K., et al, "Filamentous Carbon Growth on Nickel-Iron Surfaces: The Effect of Various Oxide Additives," *Journal of Catalysis,* 1980, pp. 464-468, 470-478.	
	AJ	BAKER, R.T.K., "Catalytic Growth of Carbon Filaments," *Carbon,* 1989, pp. 315-323.	
	AK	BAKER, R.T.K., et al, "The Formation of Filamentous Carbon," *Chemistry and Physics of Carbon,* 1973, pp. 83-165.	
	AL	BERNARDO, C.A., et al, "Carbon Deposition and Methane Steam Reforming on Silica-Supported Ni-Cu Catalysts," *Journal of Catalysts,* 1985, pp. 517-534.	
	AM	BODKE, A.S., et al, "Oxidative Dehydrogenation of Ethane at Millisecond Contact Time: Effect of H_2 Addition," *Journal of Catalysis,* 2000, pp. 62-74.	
	AN	BOEHM, H.P., "Carbon From Carbon Monoxide Disproportionation on Nickel and Iron Catalysts: Morphological Studies and Possible Growth Mechanisms," *Carbon,* 1973, pp. 583-590.	

Examiner Signature		Date Considered	

* Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet	3	of	4		

Complete if Known	
Application Number	10/644,249
Filing Date	August 20, 2003
First Named Inventor	Joe D. Allison
Art Unit	1754
Examiner Name	
Attorney Docket Number	9863.0-02 (1856-38400)

NON PATENT LITERATURE DOCUMENTS

	AO	BOELLAARD, E., et al, "The Formation of Filamentous Carbon on Iron and Nickel Catalysts," *Journal of Catalysis,* 1985, pp. 481-490.	
	AP	BRADLEY, JOHN P., et al, "Catalytically Grown Carbon Filaments from a Smelter Aerosol," *Nature,* 1983, pp. 770-772.	
	AQ	CAMPBELL, STEPHEN A., "The Science and Engineering of Microelectronic Fabrication," *Oxford University Press,* 2001, pp. 326-354.	
	AR	DE BOKX, A., et al, "The Formation of Filamentous Carbon on Iron and Nickel Catalysts," *Journal of Catalysis,* 1985, pp. 454-467.	
	AS	EGASHIRA, MAKOTO, et al, "Preparation of Carbonaceous Materials Whiskerized with Carbon Fibers (Part 3) Carbon Whiskerization on the Polyacrylonitrile- and Pitch-based Carbon Fibers," *Sekiyu Gakkaishi,* 1985, pp. 411-412.	
	AT	ENDO, MORINOBU, et al, "Structural Improvement of Carbon Fibers Prepared from Benzene," *Japanese Journal of Applied Physics,* 1976, pp. 2073-2076.	
	AU	EVANS, E.L., et al, "Growth of Filamentary Carbon on Metallic Surfaces During the Pyrolysis of Methane and Acetone, *Carbon,* 1973, pp. 441-445.	
	AV	HUFF, M., et al, "Production of Olefins by Oxidative Dehydrogenation of Propane and Butane Over Monoliths at Short Contact Times," *Journal of Catalysis,* 1994, pp. 127-141.	
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	AX	KANDANI, N., et al, "Vapor Grown Carbon Fibers – Methane Decomposition, *Largs – Enseeg,* BP 75 – France, (2 pages).	
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	AZ	KOYAMA, TSUNEO, et al, "Structure and Properties of Graphitized Carbon Fiber," *Japanese Journal of Applied Physics,* 1974, pp. 1933-1939.	
	BA	KOYAMA, TSUNEO, et al, "Carbon Fibers Obtained by Thermal Decomposition of Vaporized Hydrocarbon," *Japanese Journal of Applied Physics,* 1972, pp. 445-449.	
	BB	KOYAMA, TSUNEO, et al, "Structure and Grown Process of Vapor-Grown Carbon Fibers," *Applied Physics,* 1973, pp. 690-696.	

Examiner Signature		Date Considered	

* Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Applicant's unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	10/644,249
				Filing Date	August 20, 2003
				First Named Inventor	Joe D. Allison
(Use as many sheets as necessary)				Art Unit	1754
				Examiner Name	
Sheet	4	of	4	Attorney Docket Number	9863.0-02 (1856-38400)

NON PATENT LITERATURE DOCUMENTS

	BC	MAKKUNI, AJAY, et al, "Hydrogen and Nanotube Production by Catalytic Decomposition of Ethane," *Fuel Chemistry Division Preprints,* 2002, pp. 782-783.	
	BD	NISHIYAMA, Y., et al, "Effect of Hydrogen on Carbon Deposition Catalyzed by Copper-Nickel Alloys," *Journal of Catalysis,* 1976, pp. 1-5.	
	BE	NISHIYAMA, Y., et al, "Carbon Formation on Copper-Nickel Alloys from Benzene," *Journal of Catalysis,* 1974, pp. 98-107.	
	BF	RENSHAW, G.D., et al, "Disproportionation of CO 1. Over Iron and Silicon-Iron Single Crystals," *Journal of Catalysis,* 1970, pp. 164-183.	
	BG	TAVARES, TERESA M., et al "Reactivity of Carbon Deposited on Nickel-Copper Alloy Catalysts from the Decomposition of Methane," *Journal of Catalysis,* 1986, pp. 545-548.	
	BH	ROBERTSON, STRUAN D., "Carbon Formation From Methane Pyrolysis Over Some Transition Metal Surfaces – I. Nature and Properties of the Carbons Formed," *Carbon,* 1970, pp. 365-374.	
	BI	SCHMIDT, LANNY D., et al, "New Ways to Make Old Chemicals," *AJChE Journal,* 2000, pp. 1492-1495.	
	BJ	"Synthesis and Processing: Morphologically Specific Methods," *Research Opportunities for Materials with Ultrafine Microstructures,* 1990, pp. 39-58.	
	BK	TESNER, P.A., et al, "Formation of Carbon Fibers From Acetylene," *Carbon,* 1970, pp. 435-442.	
	BL	TIBBETTS, GARY G., "Why Are Carbon Filaments Tubular?," *Journal of Crystal Growth,* 1984, pp. 632-638.	
	BM	TIBBETTS, GARY G., "Carbon Fibers Produced by Pyrolysis of Natural Gas in Stainless Steel Tubes," *Appl. Phys. Lett. 42,* 1983, pp. 666-668.	
	BN	TIBBETTS, GARY G., "Vapor-Grown Carbon Fibers," *Carbon Fibers Filaments and Composites,* 1990, pp. 73-94.	
	BO	WEISBECK, ROLAND, "Pyrolytische Graphit-Kristalle Mit Wickelstruktur," *Carbon,* 1971, pp. 525-526.	
	BP	List of Search Results for "Coating" and Carbon Nanotube Metal," (5 pages).	
	BQ	http://www.uop.com/techsheets/oleflex.pdf, Oleflex™ Process for Propylene Production, 1998, (2 pages).	

Examiner Signature		Date Considered	

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ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18
Stylesheet Version v18.0

Title of Invention	Metal Loaded Carbon Filaments

Application Number: 10/644249 *10/644249*
Confirmation Number: 6049
First Named Applicant: Joe Allison
Attorney Docket Number: 1856-38400
Art Unit: 1754
Search string: (6072097 or 5925799 or 5654491 or 6183714 or 6159892 or 6143689 or 6129901 or 5965267 or 5877110 or 5780101 or 5767039 or 5747161 or 5726116 or 5707916 or 5618875 or 5591312 or 5589152 or 5578543 or 5569635 or 5500200 or 5456897 or 5424054 or 5413866 or 5165909 or 5149584 or 4663230 or 4628065 or 4572813 or 4339413 or 20030129121 or 20030065235 or 20030040655).pn.

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
	1	6072097	2000-06-06	Yokoyama et al.		585	658
	2	5925799	1999-07-20	Stanley et al.		585	259
	3	5654491	1997-08-05	Goetsch et al.		568	469.9
	4	6183714	2001-02-06	Smalley et al.		423	447.3
	5	6159892	2000-12-12	Moy et al.		502	174
	6	6143689	2000-11-07	Moy et al.		502	170
	7	6129901	2000-10-10	Moskovits et al.		423	447.3
	8	5965267	1999-10-12	Nolan et al.		428	408
	9	5877110	1999-03-02	Snyder et al.		502	180
	10	5780101	1998-07-14	Nolan et al.		427	216
	11	5767039	1998-06-16	Yamagishi et al.		502	342
	12	5747161	1998-05-05	Iijima		428	367
	13	5726116	1998-03-10	Moy et al.		502	182
	14	5707916	1998-01-13	Snyder et al.		502	180

	15	5618875	1997-04-08	Baker et al.	524	495
	16	5591312	1997-01-07	Smalley	204	157.41
	17	5589152	1996-12-31	Tennent et al.	423	447.3
	18	5578543	1996-11-26	Tennent et al.	502	180
	19	5569635	1996-10-29	Moy et al.	502	185
	20	5500200	1996-03-19	Mandeville et al.	423	447.3
	21	5456897	1995-10-10	Moy et al.	423	447.3
	22	5424054	1995-06-13	Bethune et al.	423	447.2
	23	5413866	1995-05-09	Baker et al.	423	447.2
	24	5165909	1992-11-24	Tennent et al.	423	447.3
	25	5149584	1992-09-22	Baker et al.	428	297
	26	4663230	1987-05-05	Tennent	428	367
	27	4628065	1986-12-09	Prouteau et al.	518	700
	28	4572813	1986-02-25	Arakawa	264	29.2
	29	4339413	1982-07-13	Lahne et al.	422	200

US Published Applications

Note: Applicant is not required to submit a paper copy of cited US Published Applications

init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
	1	20030129121	2003-07-10	Allison et al.		423	447.3
	2	20030065235	2003-04-03	Allison et al.		585	656
	3	20030040655	2003-02-27	Budin et al.		585	627

Signature

Examiner Name	Date

UNITED STATES PATENT AND TRADEMARK OFFICE
ACKNOWLEDGEMENT RECEIPT

Electronic Version 1.1
Stylesheet Version v1.1.1

Title of Invention	Metal Loaded Carbon Filaments

Submission Type: Information Disclosure Statement

Application Number: 10/644249 *10/644249*

EFS ID: 58026

Server Response:

Confirmation Code	Message
ISVR1	Submission was successfully submitted - Even if Informational or Warning Messages appear below, please do not resubmit this application
ICON1	6049
ISYS5	Filename= N/A BusinessRule= Validation System/Function Call Information. #Supporting Msg:Server unable to validate the Confirmaton/Application numbers at this time. They will be checked by PTO personnel later.

First Named Applicant: Joe Allison

Attorney Docket Number: 1856-38400

Timestamp: 2004-03-29 11:20:52 EDT

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us-ids	us-ids.dtd	7763
us-ids	us-ids.xsl	12026
package-data	1856-38400-pkda.xml	2028
package-data	package-data.dtd	27025
package-data	us-package-data.xsl	19263
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